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FORMATION OF THE TRAJECTORY OF THE DEVELOPMENT OF TEACHERS' DIGITAL COMPETENCE

The article examines ways and approaches to the formation of digital competence of a teacher of a higher military education institution. The importance of the introduction of modern educational technologies in the educational process is indicated, the role of a trained teacher in this process, who possesses a certain set of professional competencies and is able to generate them for those who study, is emphasized. Attention is focused on approaches to the formation of the teacher's digital competence and requires personal development and continuous personal self-improvement from the teacher. The results of an empirical study of the peculiarities of the development of digital competences among teachers of institutions of higher military education are presented. It was established that in the conditions of digital challenges, the role of a teacher of a higher military education institution as a provider of digital transformations and the formation of his digital competence becomes important. It is noted that the majority of teachers are interested in the development of digital competence. It was established that teachers need the development of digital competence related to the work of gamification tools, content visualization for solving practical, professional and general educational goals. It was determined that the digital competence of teachers of higher military education institutions should be considered as a new type of literacy, which is associated with special knowledge, skills, and practical skills for activities in a digital educational environment. The development of digital competences of teachers will contribute to establishing interaction with students, overcoming the digital gap between participants in the educational process, and their conscious use of digital technologies for their own realization in the conditions of a digital society. It is indicated that the end-to-end application of digital technologies in the educational process should become a tool for improving the quality of the educational process.

Key words: *digital competence, information and communication technologies, information and educational environment, digital technologies.*

Introduction. The current state of development of information and digital technologies provides grounds for asserting that humanity, living in the era of "digital society", is changing its attitude to the real world and the digital environment. This trend is caused by the constant increase in available information, because every year, thanks to technological progress, society receives new means of obtaining data and communication between people.

The rapid pace of informatization and globalization of modern society affects the professional activity of specialists in all branches of science. The rapid digitalization of all spheres of professional and social life makes it necessary for teachers of higher military education institutions to possess a high level of digital competence, which involves mastering the skills of working in a virtual environment and confident and critical use of digital technologies in professional activities.

The use of digital technologies contributes to increasing the efficiency of the educational process. The ability and skills of using digital technologies in educational activities allows the teacher to ensure the productivity of the educational process, to be successful in the information society, to form other important professional competences, to quickly make decisions and to successfully teach others. Therefore, the primary requirement for teachers of institutions of higher military education should be a high level of formation of their digital competence.

Digital competence, like digital literacy, is necessary not only to be able to use modern technologies, to communicate in a virtual environment, but also for effective and safe communication and cooperation in a virtual society.

The analysis of the literature shows that a significant contribution to the research of information and communication training of teachers was made by scientists who studied: the development and use of electronic educational resources to accompany military training (Didenkoetal, 2020); formation of information processing skills in the military (Yang etal, 2022); problems of using digital technologies to simulate professional situations (Asri etal, 2019); Internet resources for the development of infomedia literacy (Drushlyak et al., 2022); the use of immersive military training technologies and the use of virtual reality technologies (García Rodríguez et al., 2021).

The features of information and digital competence are defined in the Concept of the Development of Digital Competences (2021) and are defined as a dynamic combination of knowledge, abilities, skills, ways of thinking, views, and other personal qualities in the field of information, communication and digital technologies, which determines a person's ability to successfully socialize, to conduct professional and/or further educational activities using such technologies.

Researchers claim that due to the lack of digital competence, the potential of digital learning is not used to its full extent, therefore educators need to actualize digital competence in the development of interactive educational materials. However, in our opinion, it is necessary to study the appropriateness of the level of formation of digital competence of teachers of higher military education institutions.

The aim of the study. To determine ways of forming digital competence among teachers of higher military education institutions

Research methods and organization. Respondents were asked to answer the questions of the "Technologies of distance learning" questionnaire, which included 8 main questions related to two blocks of questions: identifying the level of development of digital competence among teachers of higher military education institutions; level of mastery of distance learning tools. The generalized answers of the respondents to the questionnaire questions, which are directly related to the level of development of digital competence and the need for its improvement, are reflected in this article. Other results will be presented in future publications. The survey was conducted using Google Forms. In the question part of the questionnaire, the respondent could either choose the proposed answer option, or independently construct an answer to the question.

Results. The purpose of the conducted survey was to identify the specifics of the development of digital competencies among teachers of higher military education institutions. 249 teachers of higher military education institutions in different regions of Ukraine took part in the survey.

According to the results of the survey, the opinion of the respondents regarding the need to increase the level of digital competence was determined, namely, 81.5% of the respondents affirmatively answered that they need such an increase. At that time, only 15.7% of teachers did not need to increase the level of digital competence, and 2.8% of respondents were undecided during the survey period, but in the future they do not refuse such opportunities (Fig. 1).

This testifies to the readiness of teachers to perceive changes, adaptation to modern rates of education development and the need for special training to master such technologies.

For the introduction of digital technologies into the educational process, it is advisable to form the skills of using digital tools among teachers. For this purpose, the questionnaire contained questions related to the development of digital competence among teachers.

As a result of the survey, it was determined which digital skills teachers would like to improve in order to achieve educational goals and organize the educational process using digital technologies (Fig. 2).

The obtained results show that teachers are more interested in developing such skills as working with services for creating infographics (41.8%), mastering content visualization tools (67.9%), using gamification tools (58.6%) and tools for search for information (63.1%).

It is necessary to include the development of digital competence related to the work of gamification tools, content visualization in order to solve practical, professional and general educational goals in the educational programs of the system of professional development of teachers of higher military education institutions.

Discussion. Scientists Valverde-Crespo, de Pro-Bueno, Gonzalez-Sanchez (Valverde-Crespo etal., 2018) note that the ability to manage information from different sources and its processing is an important aspect of digital competence. To this end, it is necessary to provide students with procedures and strategies that will allow them to rationally search for answers to questions.

The importance of the formation of digital competence among specialists in the field of education is determined by the needs of digital management and administration, digital commerce and data generated and updated every second (Levano-Francia et al., 2019). Emphasis is placed

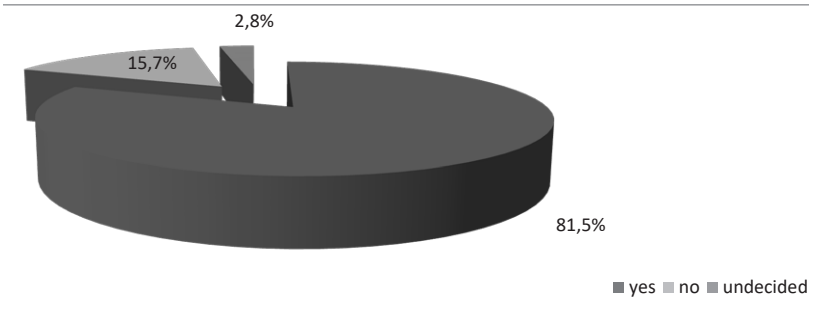

Fig. 1. Indicators of the need to increase the level of digital competence

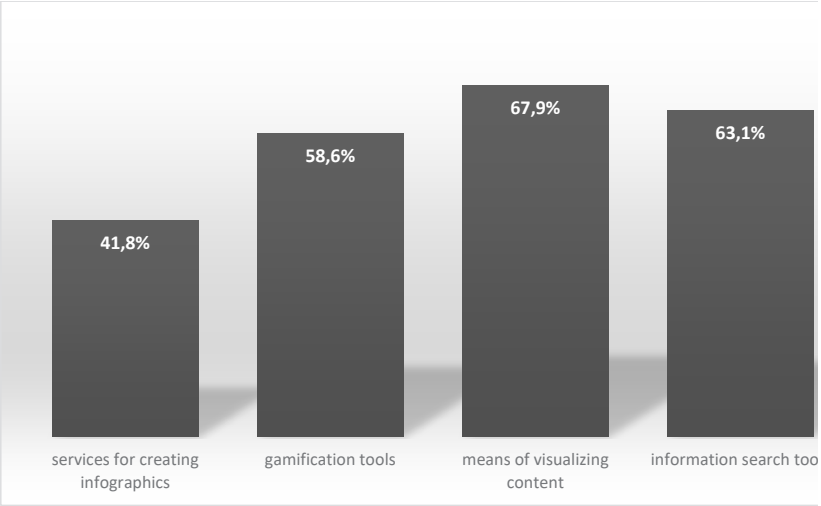

Fig. 2. Significant components for the formation of a teacher's digital competence

on modern digital tools in view of the spread of distance education and the ideology of electronic and blended learning. The authors note that the acquisition of digital competence allows for faster adaptation to innovations.

Digital competence is a cross-cutting element of building an effective educational environment.

The Digital Competence Framework (DigComp), (DigComp 2.1: Digital Competence Framework for Citizens), introduced by the European Commission, consists of six components: professional involvement (the use of digital technologies by teachers in the educational process and for their own personal professional development); digital resources (using and creating content, sharing digital resources for educational needs); teaching and learning (organization and management of the use of digital technologies in the educational process); assessment (serving digital strategies to support assessment algorithms); expanding the opportunities of education seekers (use of digital technologies to ensure individualization of education); promoting the digital competence of education seekers (creative and responsible use of digital technologies in the process of collecting and processing information, communication, content creation, well-being and problem solving).

In addition, we used in practice a more simplified model proposed by DCW (developed on the basis of DigComp 2.1), where the main components of digital competence are defined as: security (the ability to safely and systematically use digital identification technologies); creation (the ability to create, customize and edit digital content, solve digital problems in the digital space and explore new ways to take advantage of technology); communication (ability to communicate, collaborate, interact and participate in virtual teams and networks); information (the ability to identify, find, retrieve, store, organize and analyze digital information and assess its relevance and purpose).

The following aspects are important for the formation of digital competences of teachers: constant professional improvement in accordance with the challenges and development of technologies; mastering knowledge management mechanisms based on digital information processing. Therefore, digital competence can be characterized as an integrated education (information and technological literacy, communication and cooperation, creation of digital content, security and problem solving) (Ulmane-Ozolina & Priedolina, 2017).

Digital competence is a large and complex construct, its content consists of many components and forms a general model consisting of instrumental skills and knowledge.

In foreign education systems, within the concept of "digital competence" a number of concepts are defined, the content of which in many cases is identified (Zhernovnykova, et al., 2018) (Fig. 3).

Digital competence involves the confident, safe and critical use of information society technologies for work, learning, leisure and communication. It includes the basic skills of using IST, namely: the use of digital devices to acquire, evaluate, store, produce, present, communicate and share information (Huertas-Abril, 2020).

H. Beetham believes that the formation of digital literacy of a teacher at a higher education institution is related to the creation of a special professionally-oriented educational environment. The key principles of its operation are a variety of tools and resources to support the digital development of participants in the educational process, their partnership interaction, the use of joint mentoring initiatives, and the exchange of digital skills (Beetham, 2017).

Among the digital capabilities of the teacher, the author singles out the possession of ICT proficiency; Information, data and media literacies; Digital creation, problem solving and innovation; Digital communication, collaboration and participation; Digital learning and development; Digital identity and well-being.

The creation and use of the information and educational environment ensures effective interaction during the educational process and the organization of joint produc-

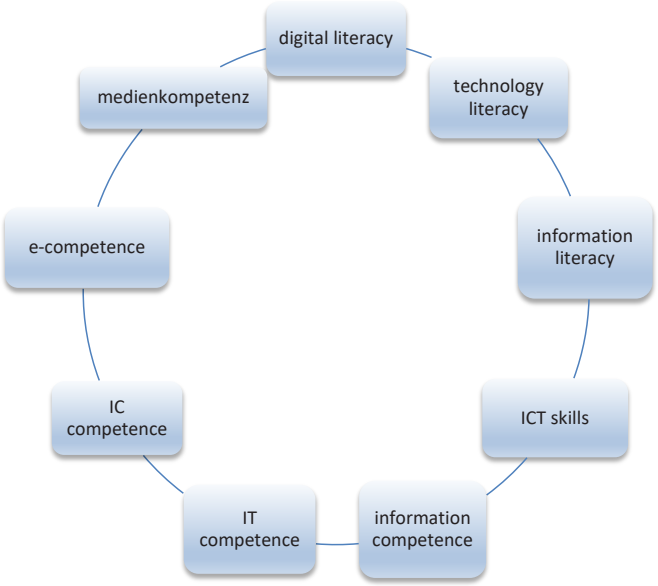

Fig. 3. The concept of "digital competence" in foreign education systems

tive activities, contributes to the formation of sustainable motivation for learning and the effectiveness of education as a whole (Semenets-Orlova et al., 2021).

The digital competence of teachers involves understanding the trends in the development of digital technologies, applying their achievements in the teaching process. The formation and development of relevant competences is possible at professional development courses. As a result of acquiring digital competence, teachers improve general and professional competences. The teacher training program for the development of digital competence includes a set of modules: education in the digital world; continuous professional development; electronic (digital) resources. Each of the modules contains expected learning outcomes by topic and reflects the degree of consistent acquisition of this competency. The teacher forms an individual educational trajectory, outlining a goal for himself and identifying certain needs, motivation for professional growth. An individual educational trajectory is formed taking into account his abilities, interests, needs, motivation, opportunities and experience and is implemented through an individual professional development plan.

Therefore, programs for improving the digital competence of teachers provide an opportunity to obtain the final result – a competent teacher who knows how to use digital technologies in the educational process. Since changes in society today are associated with the rapid development of information and communication technologies, the content of course programs must be constantly updated and improved. As you know, for education, innovation is the main factor of development, and therefore, in order to be competitive, teachers should constantly be interested in what is new in the market of providing educational services in order to master new approaches and learning technologies. The digital competence of teachers of institutions of higher military education should be considered as the newest type of literacy, which is associated with special knowledge, skills, and practical skills for activities in a digital educational environment.

Conclusions. The level of formation of a teacher's digital competence is an important indicator of his ability to use digital technologies in professional activities. The introduction of digital technologies into the educational process contributes to the transition of education to a new high-quality level of training of a modern specialist. The use of modern digital educational technologies in the educational process for their simultaneous study contributes to the development and formation of general and professional competences of the teacher, namely the ability to think abstractly and to self-organize, the ability to use digital technologies, to apply knowledge in practical situations.

Formation and development of digital competence of teachers of higher military education institutions in the conditions of digital transformation of education acquire special significance and require personal development and continuous personal self-improvement from the teacher.

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ФОРМУВАННЯ ТРАЄКТОРІЇ РОЗВИТКУ ЦИФРОВОЇ КОМПЕТЕНТНОСТІ ВЧИТЕЛЯ

У статті досліджено шляхи та підходи до формування цифрової компетентності викладача вищого військового навчального закладу. Указано на важливість упровадження сучасних освітніх технологій у навчальний процес, підкреслено роль у цьому процесі підготовленого вчителя, який володіє певним набором професійних компетенцій і вміє їх генерувати для тих, хто навчається. Увагу зосереджено на підходах до формування цифрової компетентності вчителя, що вимагає від нього особистісного розвитку та постійного особистісного самовдосконалення. Наведено результати емпіричного дослідження особливостей розвитку цифрових компетентностей у викладачів вищих військових навчальних закладів. Установлено, що в умовах цифрових викликів важливою стає роль викладача вищого військового навчального закладу як провайдера цифрових трансформацій та формування його цифрової компетентності. Зазначено, що більшість учителів зацікавлена у розвитку цифрової компетентності. Установлено, що вчителі потребують розвитку цифрової компетентності, пов'язаної з роботою засобів гейміфікації, візуалізації контенту для вирішення практичних, професійних та загальноосвітніх завдань. Визначено, що цифрову компетентність викладачів вищих військових навчальних закладів слід розглядати як новий вид грамотності, який пов'язаний зі спеціальними знаннями, уміннями та практичними навичками діяльності у цифровому освітньому середовищі. Розвиток цифрових компетентностей педагогів сприятиме налагодженню взаємодії зі студентами, подоланню цифрового розриву між учасниками освітнього процесу, свідомому використанню ними цифрових технологій для власної реалізації в умовах цифрового суспільства. Указано, що наскрізне застосування цифрових технологій у навчальному процесі має стати інструментом підвищення якості освітнього процесу.

Ключові слова: *цифрова компетентність, інформаційно-комунікаційні технології, інформаційно-освітнє середовище, цифрові технології.*

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